APC
by Schneider Electric

Operation

Symmetra® PX

48, 96, and 160 kW 400 V
100 kW 208 V

About this Manual

This manual is intended for users of:

- Symmetra® PX 48 kW 400 V UPS
- Symmetra® PX 96 and 160 kW 400 V UPS and Power Distribution Unit (PDU-XR)
- Symmetra® PX 100 kW 208 V UPS and Power Distribution Unit (PDU)
- XR Battery Enclosure

It refers to important safety warnings and instructions, gives an introduction to the display interface, and provides information on operation and troubleshooting.

Companion manuals

For additional information, see the following Symmetra PX manuals:

- Receiving and Unpacking (990-3013)
- Safety (990-2984)
- 96 and 160 kW 400 V Installation (990-3017)
- 48 kW 400 V Installation (990-3151)
- 100 kW 208 V Installation (990-3659)
- 48 kW 400 V XR Battery Enclosure (990-3190)
- Battery Replacement Sheet (990-2958)

Updates to this manual

Check for updates at the APC Web site **www.apc.com.** Look for the latest letter version of the manual.

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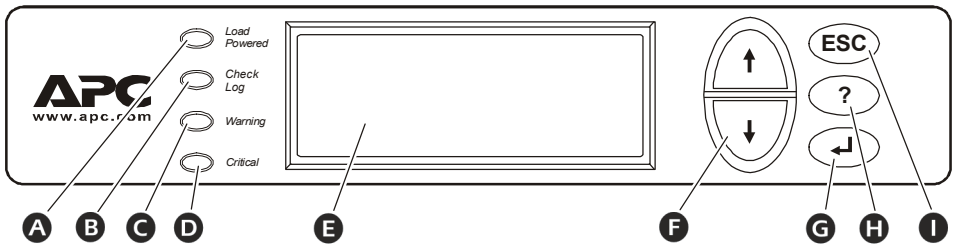
Overview

User Interface

Interface area

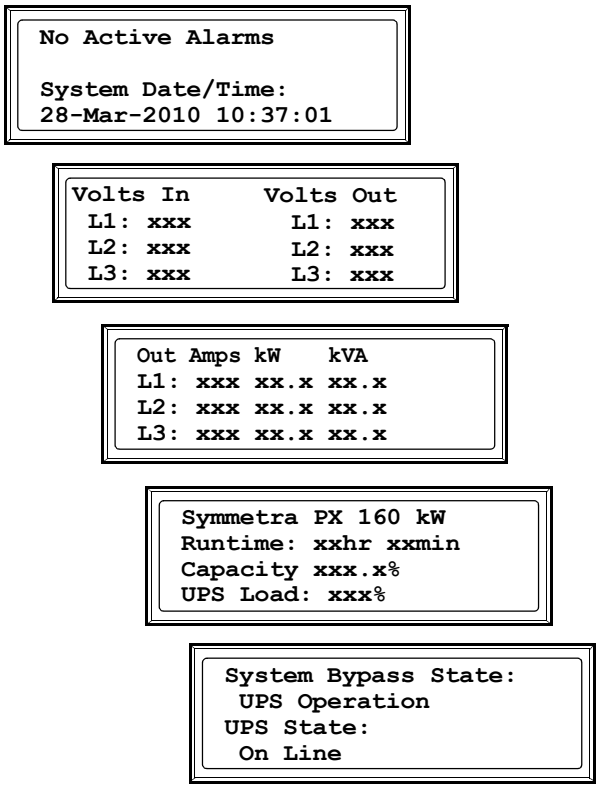


A	LOAD POWERED LED	When the LED is green, power to the load is on. When the LED is yellow, the load is supplied through the batteries. When the LED is flashing yellow, the unit is in bypass.
B	CHECK LOG LED	When the LED is green, a new event has been added to the event log.
C	WARNING LED	When the LED is yellow, there are one or more warning alarms in the system.
D	CRITICAL LED	When the LED is red, there are one or more critical alarms in the system.
E	LCD SCREEN	The screen displays alarms, status data, instructional help, and configuration items.
F	UP and DOWN keys	These keys scroll through menu items.
G	ENTER	This button opens menu items and confirms changes to system parameters.
H	HELP	This button opens context-sensitive help.
I	ESC	This button returns to previous screen.

Display interface

Overview screens. When the system is running, the display will scroll through screens showing information about the system and any active alarms.

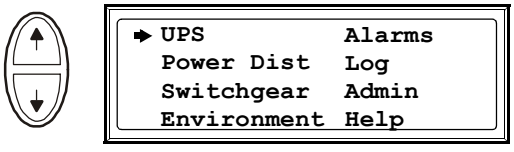
Note: The data values shown are for example only.



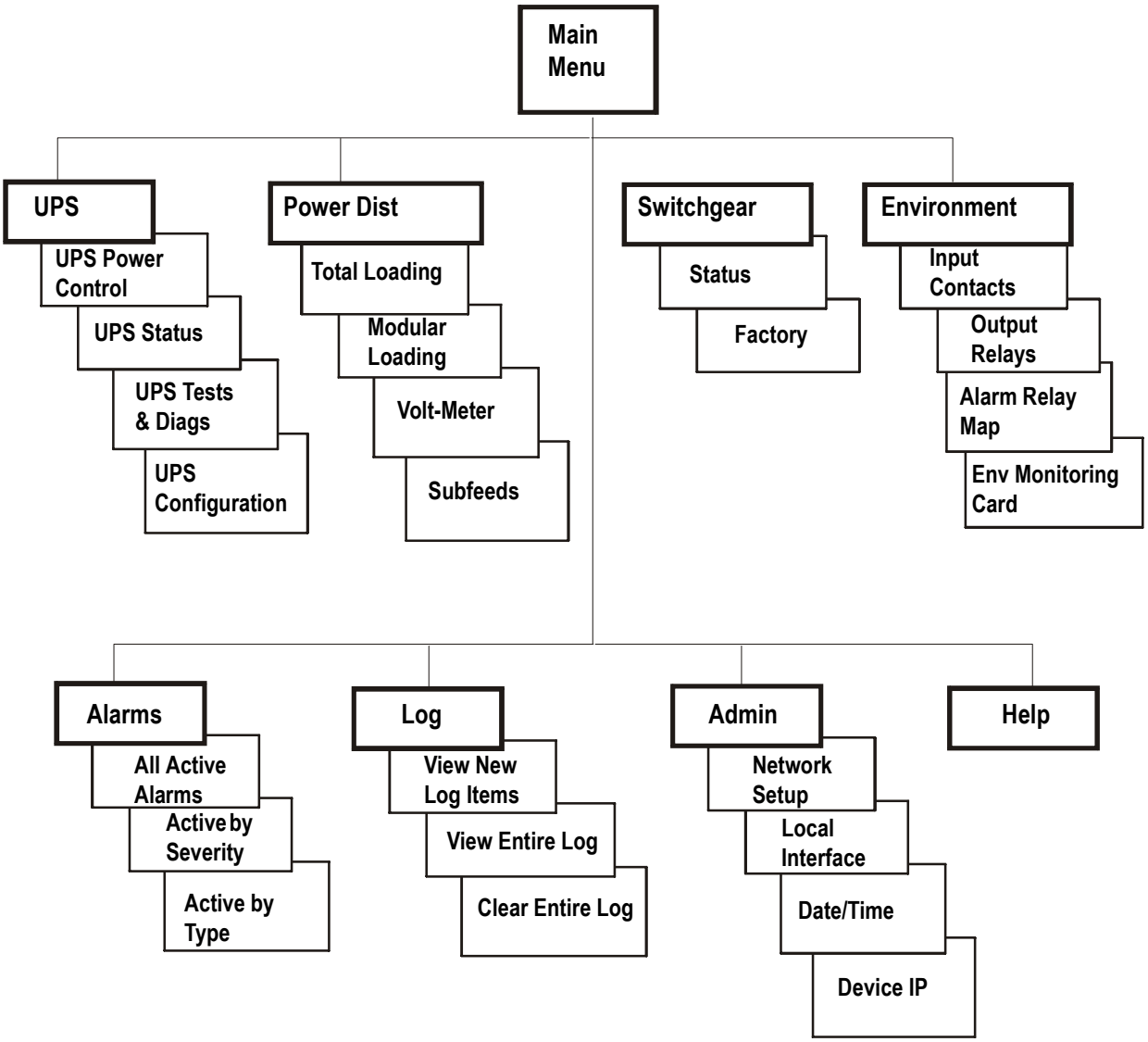
Note: Press ENTER to go from any overview screen to the main menu screen.

Main menu screen. From the main menu it is possible to configure and monitor the system through the sub menu screens: **UPS**, **Power Dist**, **Switchgear**, **Environment**, **Alarms**, **Log**, **Admin**, and **Help**. Use the UP and DOWN arrow keys to navigate through the menu screens.

The selector arrow is controlled by the UP and DOWN keys. Press ENTER to open the menu marked by the arrow.



Menu tree



Caution: Do not attempt to make any changes to screens that are not described in this manual without the assistance of APC Customer Support.

Operation

Operation Modes

In an installation that does not include a maintenance bypass panel, the UPS has three operation modes. If the installation includes a PDU, a PDU-XR, or an external maintenance bypass panel, maintenance bypass operation also becomes available.

Normal operation

During normal operation, the UPS converts the utility/mains supply to conditioned power for the connected load.

Battery operation

During battery operation, the UPS provides conditioned power to the connected load from its batteries for a finite period. The UPS transfers to battery operation if the utility/mains power supply fails or is outside pre-defined limits.

Static bypass operation

Static bypass operation is a feature that keeps the load supplied directly from the utility/mains supply during different scenarios on the UPS or downstream from the UPS. In static bypass operation, the utility/mains is supplying power to the connected load directly, bypassing all internal UPS functions.

Maintenance bypass operation (optional)

The UPS can be connected to a PDU, a PDU-XR, or an optional external maintenance bypass panel that enables the user to bypass the UPS completely for maintenance purposes that might even include replacement of the entire UPS. The connected load will then be fed directly from the utility/mains supply, and there will in this case be no filtering of the supply or battery backup of the load.

Operation Procedures

Breakers in the system

Q1: UPS input	Q3: Maintenance Bypass
Q2: UPS output	Q5: Static Bypass input (only in dual utility/mains systems)

Note: If the system does not contain a PDU or PDU-XR, the Q1, Q2, and Q3 switches and the Q5 breaker should be located in an optional external maintenance bypass panel. See the documentation included with the maintenance bypass panel for additional information.

Perform a total power off

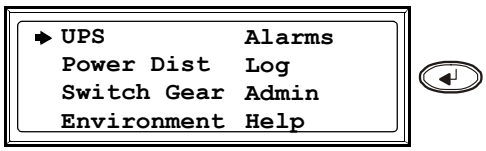
Warning: This procedure will disconnect the load.

Warning: Verify that the UPS is in total power off mode by following this procedure.

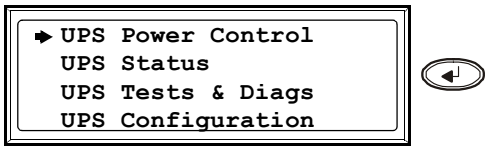
Note: If shutdown via the display is disabled, proceed to step two. If you want to enable shutdown via the display, then call APC.

1. Use the display interface to turn the UPS off.

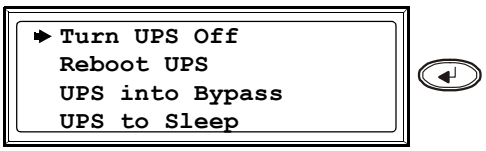
   a. Select **UPS** and press ENTER.

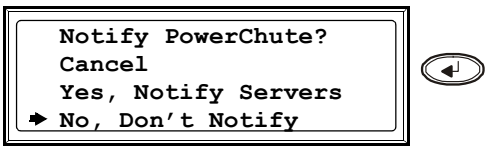
   b. Select **UPS Power Control** and press ENTER.

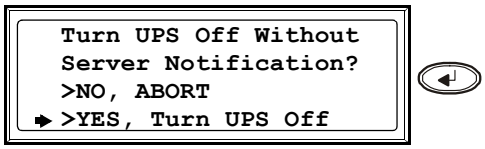
   c. Select **Turn UPS Off** and press ENTER.

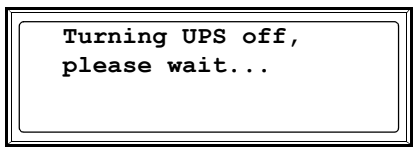
   d. Select **No, Don't Notify** to shut down without delay and press ENTER.

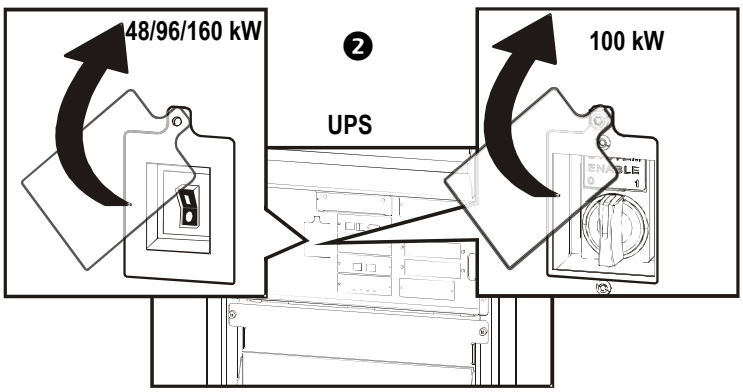
   e. Confirm **YES, Turn UPS Off** and press ENTER.

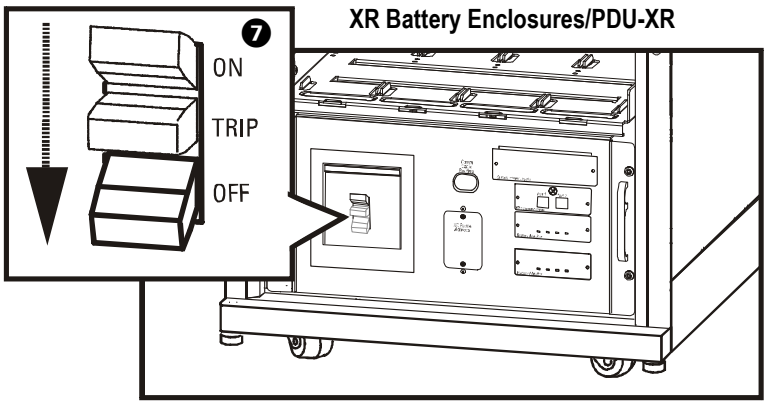
   f. Wait for the UPS to turn off.

2. Set the UPS SYSTEM ENABLE switch to the OFF position.
3. Set the Q2 switch to the OFF position.
4. Set the Q1 switch to the OFF position.
5. Set the Q5 breaker to the OFF position (if applicable).
6. Verify that the maintenance bypass switch (Q3) is in the OFF position.



7. Set the DC DISCONNECT switch on all of the XR Battery Enclosures and the PDU-XR (if applicable) to the OFF position.

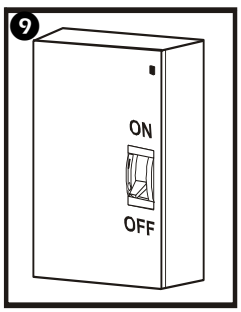


XR Battery Enclosures/PDU-XR

8. Disconnect all battery units by removing them or pulling them out to the red disconnect line.

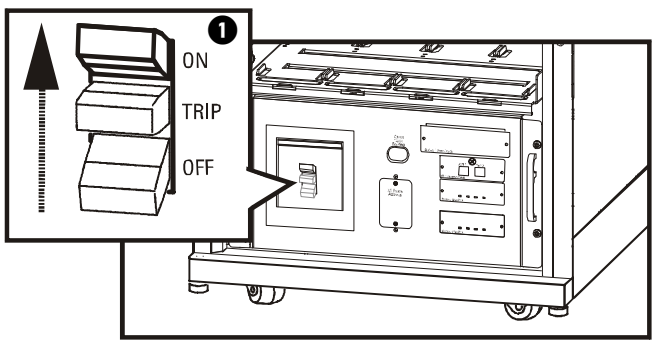
Caution: To ensure that the enclosure does not tip, do not pull out the battery units beyond the red disconnect line. If you intend to completely remove the battery units, remove them from the enclosure one at a time. Failure to pull battery units out to the red disconnect line could cause deep discharge/damage to the batteries.

9. Set the upstream mains power to the OFF or LOCKED OUT position. If the UPS has a dual mains supply, set both supplies to the OFF or LOCKED OUT position.



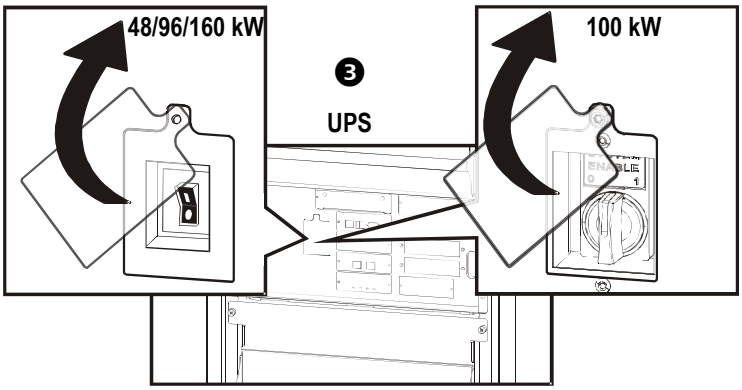
Start the system after total power off

1. Set the DC DISCONNECT switch to the ON position on all XR Battery Enclosures and the PDU-XR (if applicable).



2. Set the Q1 switch to the ON position.

3. Set the SYSTEM ENABLE switch on the UPS to the ON position.



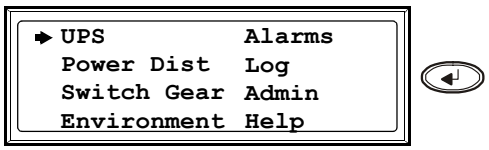
Note: Wait approximately two minutes for the system to start.

4. Set the Q5 breaker to the ON position (if applicable).

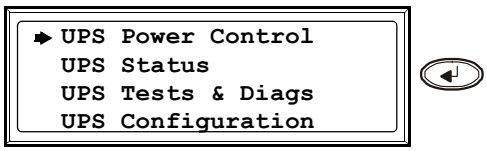
Note: The H2 LED next to the Q2 switch will illuminate, indicating that it is safe to operate the Q2 switch.

5. Set the Q2 switch on the PDU, PDU-XR or the external maintenance bypass panel to the ON position.
6. Use the display interface to turn the UPS on:

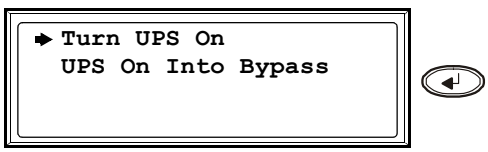
a. Select **UPS** and press ENTER.



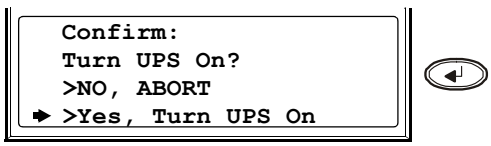
b. Select **UPS Power Control** and press ENTER.



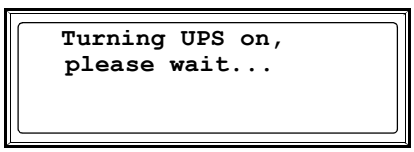
c. Select **Turn UPS On** and press ENTER.



d. Confirm by selecting **Yes, Turn UPS On** and press ENTER.

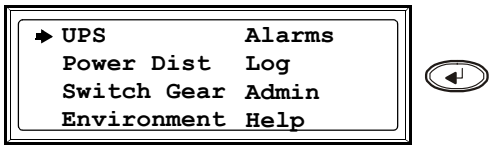


e. Wait for the UPS to turn the UPS on.

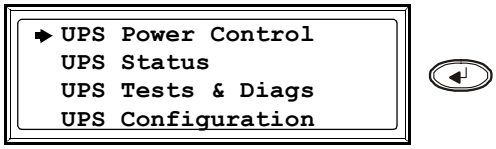


Turn the UPS load off

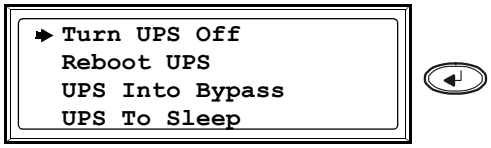
1. Select **UPS** and press ENTER.



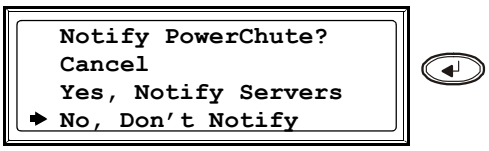
2. Select **UPS Power Control** and press ENTER.



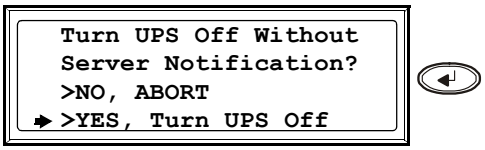
3. Select **Turn UPS Off** and press ENTER.



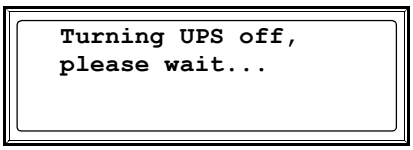
4. Select **No, Don't Notify** and press ENTER.



5. Confirm **YES, Turn UPS Off** and press ENTER.

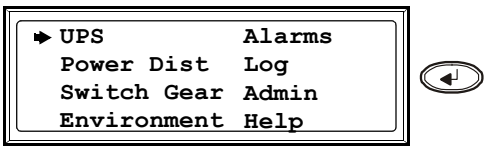


6. Wait for the UPS to turn off.

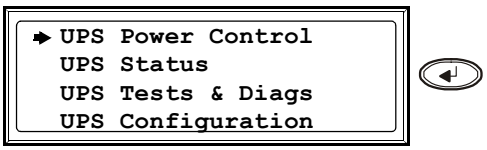


Turn the UPS load on

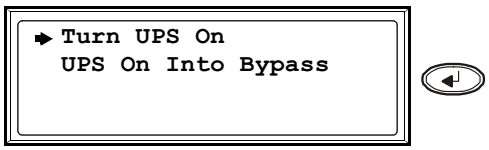
1. Select **UPS** and press ENTER.



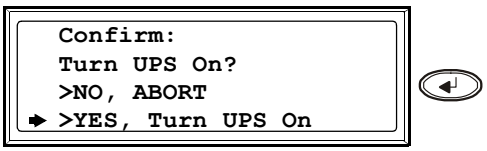
2. Select **UPS Power Control** and press ENTER.



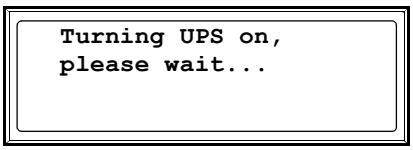
3. Select **Turn UPS On** and press ENTER.



4. Confirm by selecting **Yes, Turn UPS On** and press ENTER.



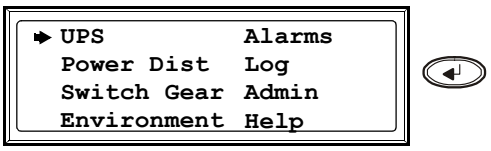
5. Wait for the UPS to turn the load on.



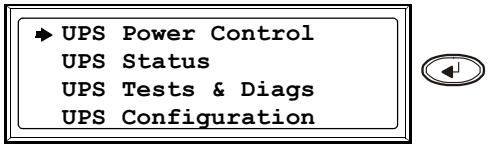
Transfer the UPS into maintenance bypass operation

1. Use the display to transfer the UPS in bypass.

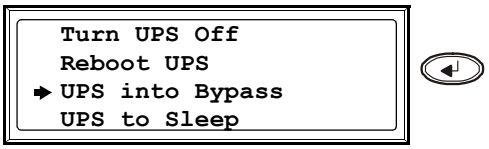
a. Select **UPS** and press ENTER.



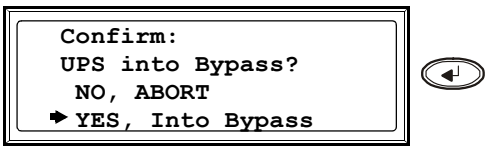
b. Select **UPS Power Control** and press ENTER.



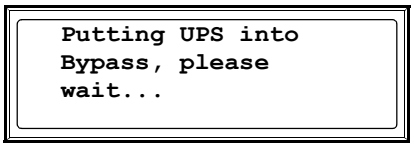
c. Select **UPS into Bypass** and press ENTER.



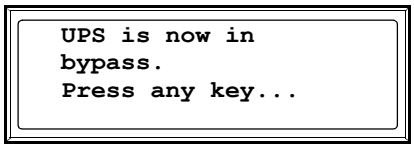
d. Select **Yes, Into Bypass** and press ENTER.



e. Wait for the transfer to complete.



f. Confirm that the transfer to bypass is complete.



Note: The H3 LED next to the Q3 switch will illuminate, indicating that it is ok to operate the Q3 switch.

2. Set the Q3 switch to the ON position.

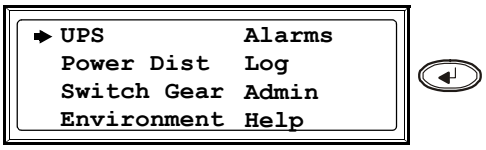
Note: The H2 LED beside the Q2 switch will illuminate, indicating that it is ok to operate the Q2 switch.

3. Set the Q2 switch to the OFF position.

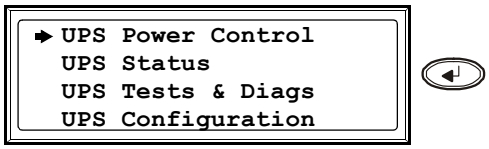
Note: If shutdown via the display is disabled, proceed to step five. If you want to enable shutdown via the display, then call APC.

4. Use the display interface to turn the UPS off.

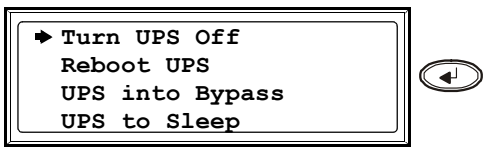
a. Select **UPS** and press ENTER.



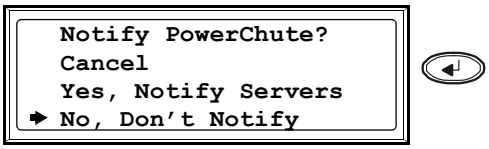
b. Select **UPS Power Control** and press ENTER.



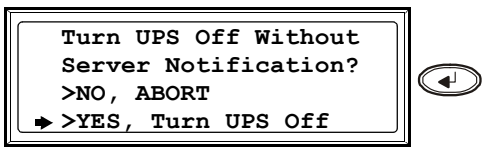
c. Select **Turn UPS Off** and press ENTER.



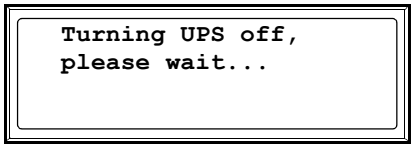
d. Select **No, Don't Notify** and press ENTER.



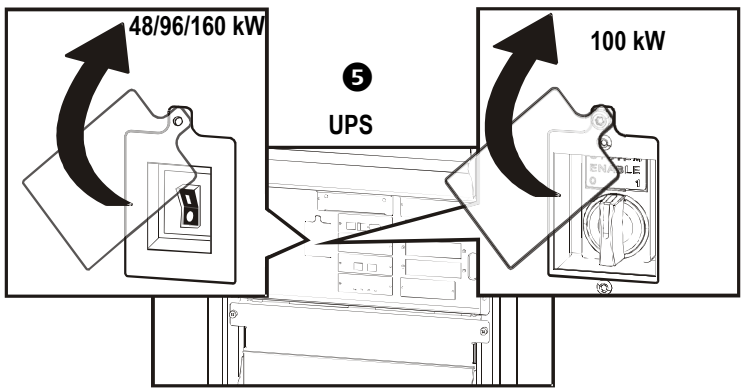
e. Confirm by selecting **YES, Turn UPS Off** and press ENTER.



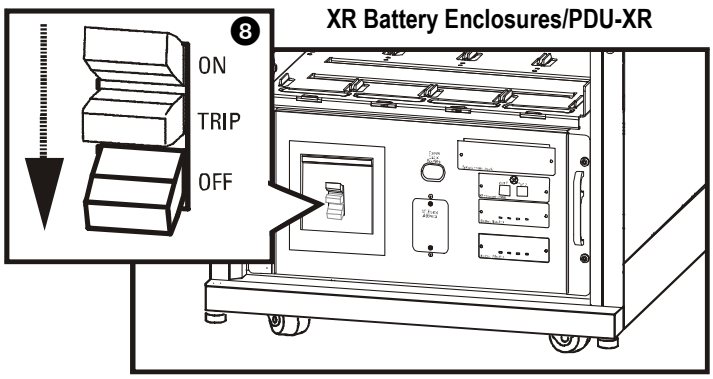
f. Wait for the UPS to turn off.



5. Set the UPS SYSTEM ENABLE switch to the OFF position.
6. Set the Q1 switch to the OFF position.
7. Set the Q5 breaker to the OFF position (if applicable).

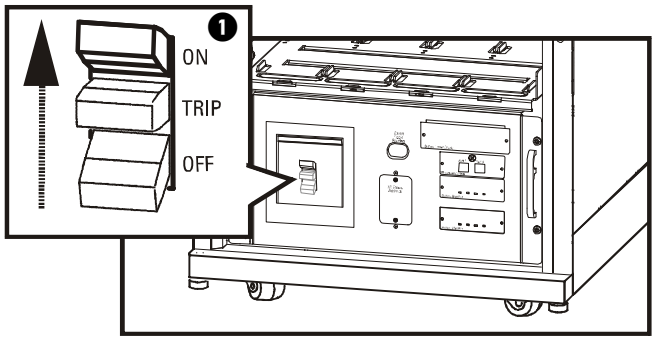


8. Set the DC DISCONNECT switch to the OFF position on all XR Battery Enclosures and the PDU-XR (if applicable).

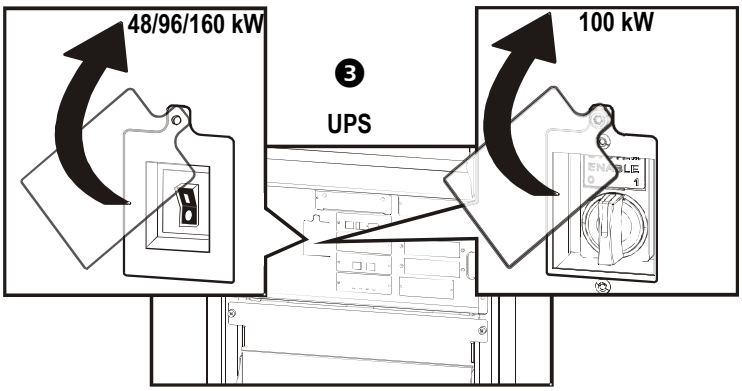


Return to on line operation from maintenance bypass operation

1. Set the DC DISCONNECT switch to the ON position on all XR Battery Enclosures and the PDU-XR (if applicable).



2. Set the Q1 switch to the ON position.
3. Set the SYSTEM ENABLE switch on the UPS to the ON position.

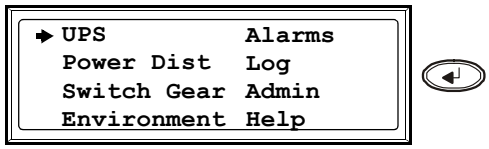


Note: Wait approximately two minutes for the system to start.

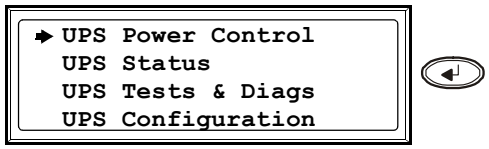
4. Set the Q5 breaker to the ON position (if applicable).

5. Use the display interface to turn the UPS load on:

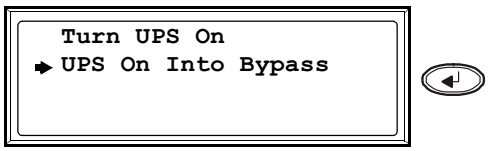
a. Select **UPS** and press ENTER.



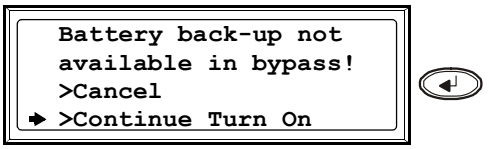
b. Select **UPS Power Control** and press ENTER.



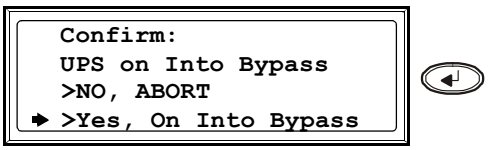
c. Select **Turn UPS On Into Bypass** and press ENTER.



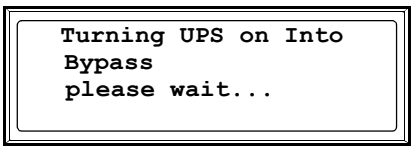
d. Select **Continue Turn On** and press ENTER.



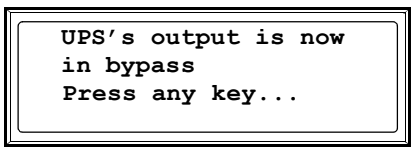
e. Confirm by selecting **Yes, On Into Bypass** and press ENTER.



f. Wait for the UPS to turn the load on.



g. The UPS is now ON.



Note: The H2 LED next to the Q2 switch will illuminate, indicating that it is safe to operate the Q2 switch.

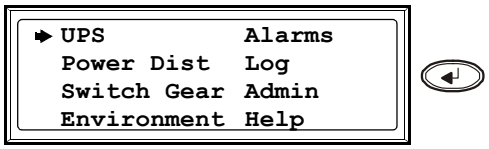
6. Set the Q2 switch on the PDU, PDU-XR or the external maintenance bypass panel to the ON position.

Note: The H3 LED next to the Q3 switch will illuminate, indicating that it is safe to operate the Q3 switch.

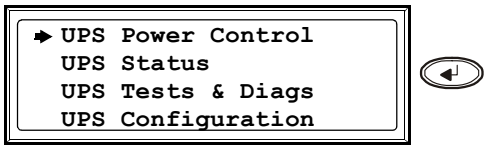
7. Set the Q3 switch to the OFF position.

8. Use the display interface to transfer the UPS out of bypass:

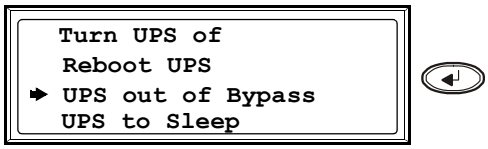
a. Select **UPS** and press ENTER.



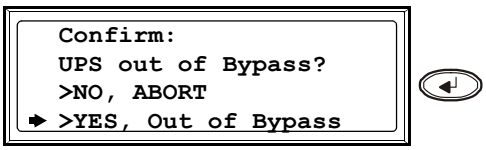
b. Select **UPS Power Control** and press ENTER.



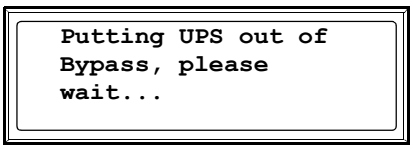
c. Select **UPS out of Bypass** and press ENTER.



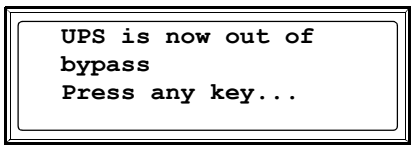
d. Confirm by selecting **Yes, Out of Bypass** and press ENTER.



e. Wait for the UPS to transfer out of bypass.

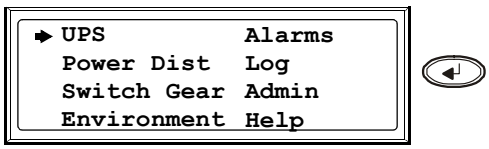


f. The UPS is now out of bypass.

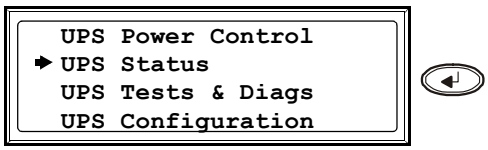


View the status screens

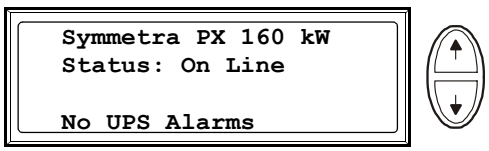
1. Select **UPS** and press ENTER.



2. Select **UPS Status** and press ENTER.

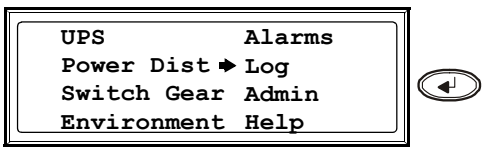


3. Use the UP and DOWN arrow keys to navigate through the Status screens.

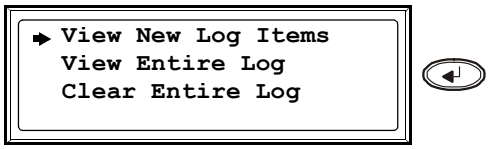


View the log screen

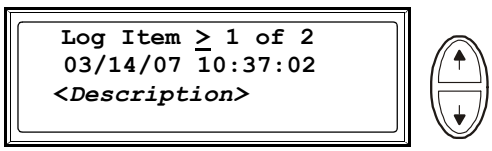
1. Select **Log** and press ENTER.



2. Select **View New Log Items** to see new log items when the Check Log LED is lit and press ENTER. To see historical events select the **View Entire Log** and press ENTER.



3. Use the UP and DOWN arrow keys to navigate through the Log screens.

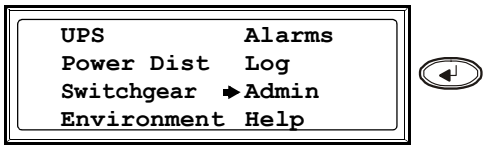


Configuration

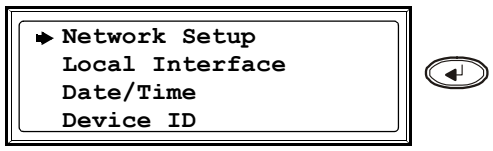
System Settings

Set up the network

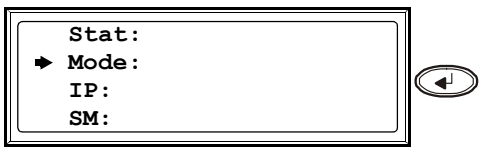
1. Select **Admin** and press ENTER.



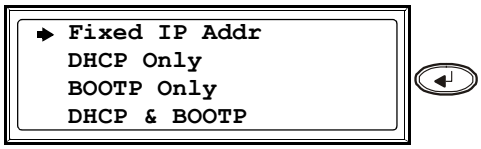
2. Select **Network Setup** and press ENTER.



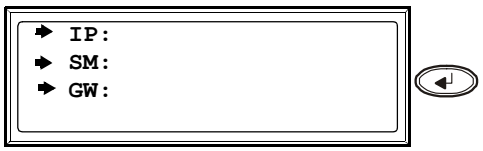
3. Select Mode and press ENTER.



4. Select **Fixed IP Addr** to give a specific IP adress to the UPS system or select one of the other three methods to obtain an IP adress. In this example Fixed IP Addr mode is selected.

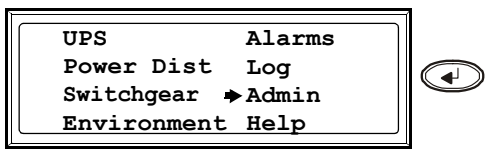


5. Select **IP (Internet Protocol)**, **SM (Subnet Mask)**, and **GW (GateWay)** and change the settings using the UP and DOWN arrow keys. Press ENTER to confirm the changes.

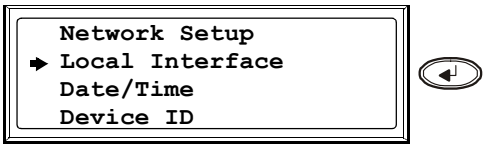


Change the display interface settings

1. Select **Admin** and press ENTER.

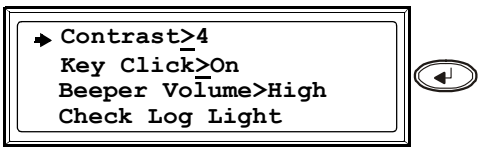


2. Select **Local Interface** and press ENTER.



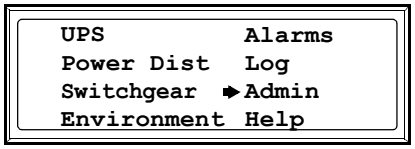
3. Select **Display Behavior** and press ENTER.

4. Select **Contrast**, **Key Click**, **Beeper Volume**, or **Check Log Light** and change the settings using the UP and DOWN arrow keys. Press ENTER to save the changes.

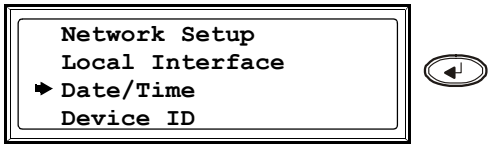


Change the date and time

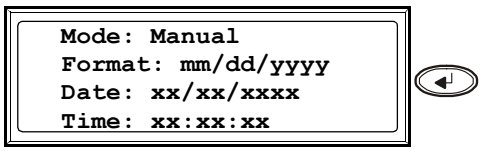
1. Select **Admin** and press ENTER.



2. Select **Date/Time** and press ENTER.

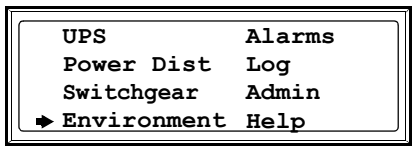


3. Select **Date** or **Time** and change the settings by using the UP and DOWN arrow keys. Press ENTER to save the changes.



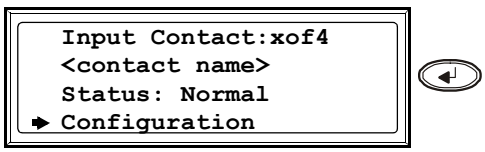
Configure input contacts

1. Select **Environment** and press ENTER.

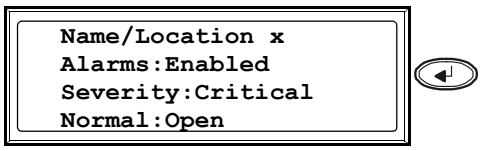


2. Select **Input Contacts** and press ENTER.

3. Select desired input contact, 1 through 4, select **Configuration**, and press ENTER.

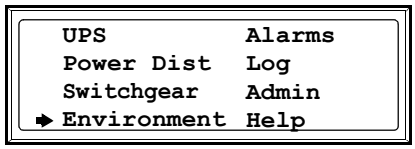


4. Change the settings for name/location, alarms, severity, and normal state.



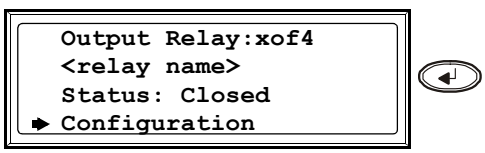
Configure output relays

1. Select **Environment** and press ENTER.

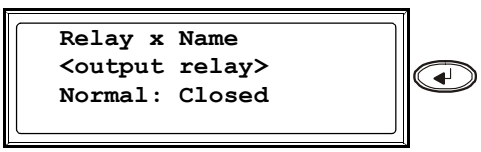


2. Select **Output Relays** and press ENTER.

3. Select desired output relay, 1 through 4, select **Configuration**, and press ENTER.



4. Change the settings for name and normal position for the selected output relay.



Maintenance

Parts Replacement

Determine if you need a replacement part

To determine if you need a replacement part, contact APC Customer Support and follow the procedure below so that the APC Customer Support representative can assist you promptly:

1. In the event of a module failure, the display interface may show additional “fault list” screens. Press any key to scroll through these fault lists, record the information, and provide it to the representative.
2. Write down the serial number of the unit so that you will have it easily accessible when you contact APC Customer Support.
3. If possible, call APC Customer Support from a telephone that is within reach of the UPS display interface so that you can gather and report additional information to the representative.
4. Be prepared to provide a detailed description of the problem. A representative will help you solve the problem over the telephone, if possible, or will assign a Return Material Authorization (RMA) number to you. If a module is returned to APC, this RMA number must be clearly printed on the outside of the package.
5. If the unit is within the warranty period, repairs or replacements will be performed free of charge. If it is not within the warranty period, there will be a charge.
6. If the unit is covered by an APC service contract, have the contract available to provide information to the representative.

Return parts to APC

Call APC Customer Support to obtain an RMA number.

To return a failed module to APC, pack the module in the original shipping materials, and return it by insured, prepaid carrier. The APC Customer Support representative will provide the destination address. If you no longer have the original shipping materials, ask the representative about obtaining a new set. Pack the module properly to avoid damage in transit. **Never use styrofoam beads or other loose packaging materials when shipping a module, as the module may settle in transit and become damaged.** Enclose a letter in the package with your name, RMA number, address, a copy of the sales receipt, description of the problem, a phone number, and a check as payment (if necessary).

Note: Damages sustained in transit are not covered under warranty.

Replacement parts

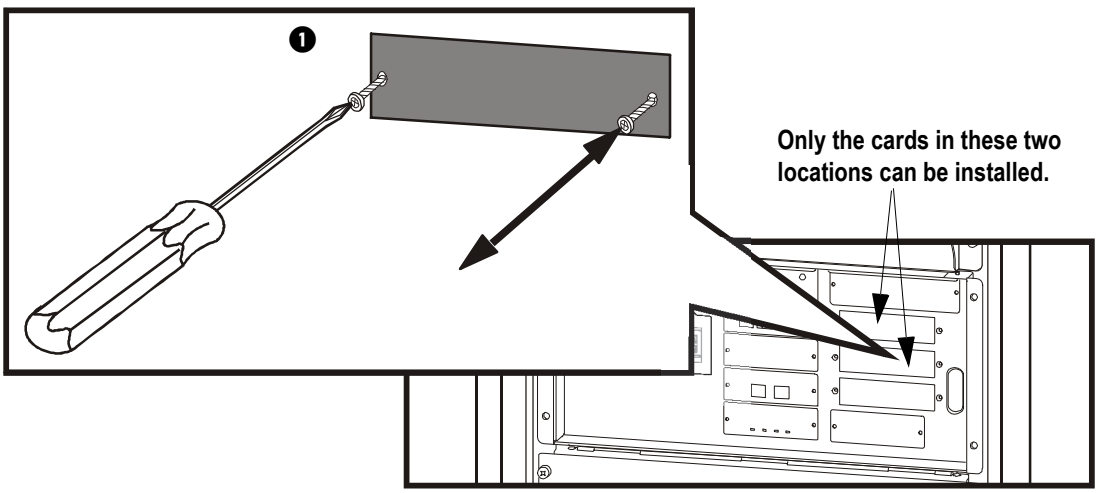
Warning: All safety instructions in the Safety sheet (990-2984) should be read, understood, and followed prior to handling the system. Failure to do so could result in equipment damage, serious injury, or death.

Warning: Only trained persons familiar with the construction and operation of the equipment, as well as the electrical and mechanical hazards involved, may install and remove system components.

Note: A maximum of two SmartSlots may be used.

Part	APC Part No.
16 kW power module for 48, 96 and 160 kW 400 V	SYPM10K16H
10 kW power for 100 kW 208 V	SYPM10KF
Battery module (four battery units)	SYBT9-B4
Battery unit	SYBTU2-PLP
SmartSlot relay I/O module (option)	AP9610
Modbus/Jbus interface Card (option)	AP9622
Network Management Card (option)	Go to www.apc.com for a list of Network Management Cards.
Power distribution module	Go to www.apc.com for a complete list of breaker modules.

Replace a power management card

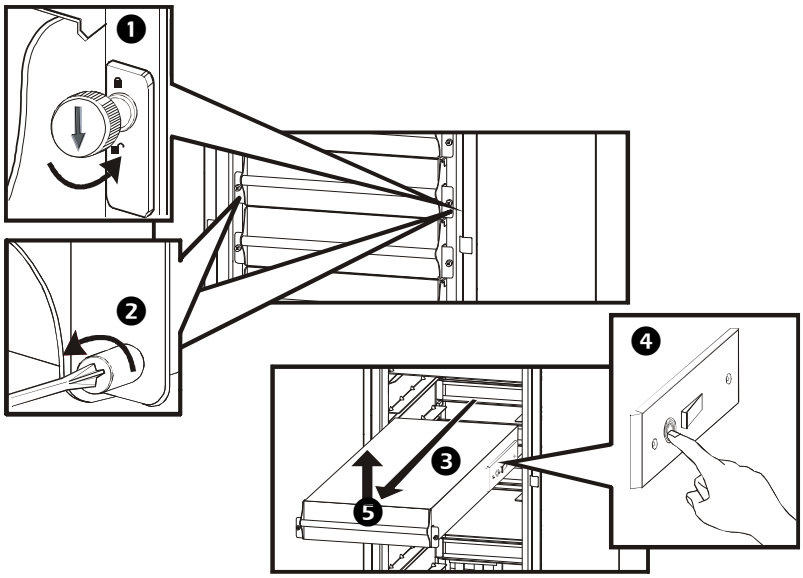


1. Loosen the two Phillips screws on the sides of the card and carefully pull it out of the enclosure.
2. Install the new card and secure it with the two screws.

Replace a power module

Warning: Before removing any power modules, make sure that the remaining power modules can support the load.

Use two people to lift components weighing between 18–32 kg (40–70 lb).



1. Turn the locking latch until the arrow points down.
2. Unscrew the spring-activated knobs on both sides of the module.
3. Pull the module up and out of the enclosure as far as the lock mechanism will allow.
4. Release the lock by pressing the black plastic tab on both sides of the module.
5. Pull the module out of the enclosure.
6. Push the replacement module into the enclosure.

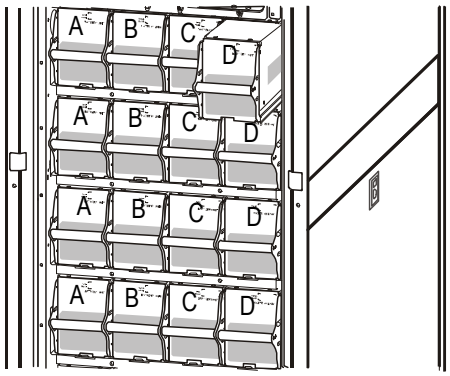
Caution: Do not attempt to insert the power module using excessive force.

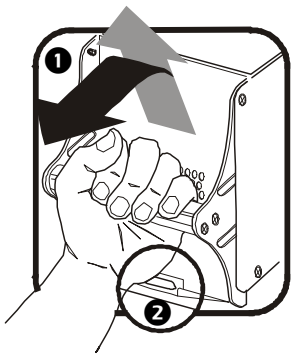
7. Tighten the spring-activated knobs on both sides of the module to ensure proper contact.
8. Secure the locking latch to start the power module.

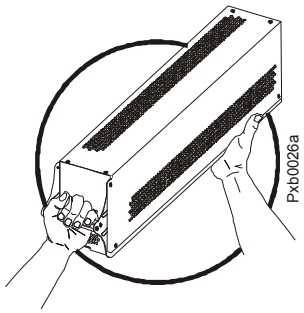
Caution: Tighten the spring-activated knobs before securing the locking latch to ensure that the module makes proper contact within the unit. The power module will not operate unless the locking latch is engaged.

Replace a battery

Use two people to lift components weighing between 18–32 kg (40–70 lb).





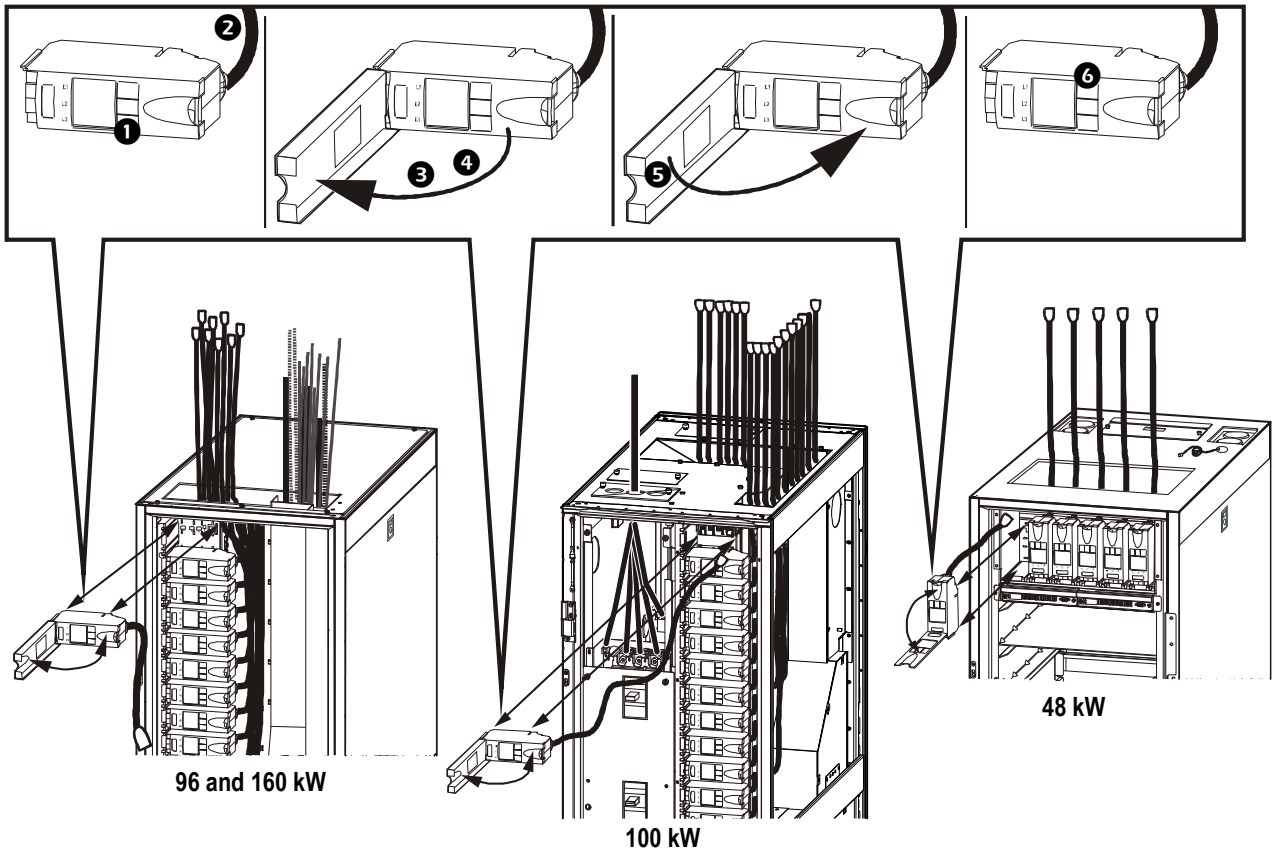


1. Holding the handle, gently lift the battery unit and pull it halfway out.
2. Release the locking mechanism by lifting the battery unit. Pull the battery unit completely out while supporting it.
3. Take the replacement battery unit and push it into the system.

Note: When replacing batteries, always replace both batteries A+B or C+D (see illustration above).

Note: Allow batteries a 24-hour recharging period after system start-up/battery replacement for battery monitoring data to become fully reliable.

Replace a power distribution module



1. Switch the breakers to the OFF position.
2. Disconnect the power distribution module's cable from the load.
3. Open the locking latch on the module and gently pull the module out of the enclosure.
4. Take the replacement power distribution module and open the locking latch. Route the power cable through the top of the enclosure and slide the power distribution module into place.
5. Secure the latch to lock the module.
6. Switch the breakers to the ON position.

Troubleshooting

Warning: Only trained persons familiar with the construction and operation of the equipment, as well as the electrical and mechanical hazards involved, may install and remove system components.

UPS Alarms

This section lists all of the common alarm and status messages that might be displayed on the display interface. A suggested corrective action is listed with each message to help troubleshoot the problem.

Note: Contact APC Customer Support if you see alarm or status messages that are not listed here.

Note: If a problem is reported, ensure that the system component in question is correctly installed.

Display Message	Meaning	Corrective Action
Battery Charger Fault	The battery charger is not functioning properly.	Contact APC Customer Support.
Battery Fault	A battery module has failed and requires replacement.	See “Replace a battery” on page 20
Battery High Temperature Violation	The temperature of one or more battery units has exceeded system specifications.	Ensure that the ambient temperature meets the specifications of the system. If the ambient temperature is below 40°C (104°F), then initiate a self-test to detect any bad battery units. Replace any bad battery units.
Battery High Voltage Violation	The battery voltage is too high and the charger has been deactivated.	Contact APC Customer Support.
Battery Monitor Card Fault	The battery monitor card has failed.	Contact APC Customer Support.
Battery Monitor Card Removed	The battery monitor card has been removed.	Contact APC Customer Support.
Discharged Battery	The UPS is online and the battery charge is low.	No corrective action necessary. Note: If the input voltage fails, runtime will be limited.
Extended Run Frame Fault	One of the battery enclosures has failed.	Contact APC Customer Support.
External DC Disconnect Switch Open	The external DC DISCONNECT switch tripped. Battery power is not available or the runtime is lower than expected.	Close the external DC DISCONNECT switch. If the problem persists, call APC Customer Support.
External Switch Gear Communication Card Fault	The external switch gear communication card has failed.	Contact APC Customer Support.

Display Message	Meaning	Corrective Action
External Switch Gear Communication Card Removed	The system no longer detects an external switch gear communication card.	**Option 1**: Ensure the external switch gear communication card is installed properly. **Option 2**: Contact APC Customer Support.
Graceful Shutdown Initiated	A graceful shutdown or reboot has been initiated from the display interface or other accessory.	No corrective action necessary.
Internal Communications Failed	One of the buses used for communication between the UPS modules has failed.	Contact APC Customer Support.
In Bypass: Hardware Fault	The system has transferred into bypass because a fault has occurred.	Contact APC Customer Support.
In Bypass: Overload	The system has transferred into bypass because the load has exceeded the power capacity of the system.	**Option 1:** Decrease the load. **Option 2:** Add a power module to the system.
In Bypass: User-Initiated	The system has been transferred into bypass due to user action.	Check for any problems with the system. Transfer the system to normal operation.
Input Voltage or Frequency Cannot Support Bypass	The frequency or voltage is out of acceptable range for bypass. This message occurs when the UPS is online, and indicates that bypass mode may not be available if required.	Correct the input voltage to provide acceptable voltage or frequency.
Intelligence Module Fault	The main intelligence module has failed and requires replacement.	Contact APC Customer Support.
Load (kVA) Alarm Violation	The load has exceeded the user-specified load alarm threshold.	**Option 1**: Use the display interface to raise the alarm threshold. **Option 2**: Reduce the load.
Local Management-To-UPS Communication Lost	Internal communications in the system have failed.	Contact APC Customer Support.
Low Battery	The UPS is in battery operation and the battery charge is low.	Runtime is limited. Shut down the system and the load equipment or restore the input voltage.
No Batteries Detected	No battery power is available.	**Option 1:** Ensure the batteries are installed properly. **Option 2:** Check to see whether the DC Breaker has been tripped. **Option 3**: Contact APC Customer Support.
No Power Modules Detected	No power modules are available.	**Option 1**: Ensure that the power modules are properly installed, the two fastening screws are tight, and the locking latch is engaged. **Option 2**: Check for other communication alarm messages in the log.

Display Message	Meaning	Corrective Action
Not Synchronized Fault	System cannot synchronize to AC line and bypass mode may not be available.	**Option 1**: Decrease the sensitivity to input frequency. **Option 2**: Correct the input voltage to provide acceptable voltage/frequency.
Output Voltage Not In Range	The output voltage is not within the specified range.	Evaluate the threshold setting. If necessary, adjust it for your situation. Contact APC Customer Support.
Overload	The load has exceeded the system power capacity.	**Option 1**: Decrease the load. **Option 2**: Add a power module to the system.
Power Failure	The input voltage is not acceptable for normal operation.	Contact APC Customer Support.
Power Module Fault	A power module has failed and requires replacement.	See “Replace a power module” on page 19.
Redundancy Alarm	Actual power module redundancy has fallen below user-specified redundancy alarm threshold. At least one power module has failed, or the load has increased.	**Option 1:** If possible, install additional power modules. See “Replace a power module” on page 19. **Option 2:** Replace failed modules. See “Replace a power module” on page 19. **Option 3:** Reduce the load. **Option 4**: Change alarm limit.
Redundancy Lost	The UPS no longer detects redundant power modules. One or more power modules have failed, or the load has increased.	**Option 1**: If possible, install additional power modules. See “Replace a power module” on page 19. **Option 2**: Replace failed modules. See “Replace a power module” on page 19. **Option 3:** Reduce the load. **Option 4**: Change alarm limit.
Redundant Intelligence Module Fault	The redundant intelligence module has failed and requires replacement.	Contact APC Customer Support.
Redundant Intelligence Module in Control	The main intelligence module has failed, and the redundant intelligence module is functioning as the primary intelligence module.	Contact APC Customer Support.
Replacement Battery Needed	One or more battery units needs to be replaced.	See “Replace a battery” on page 20
Runtime Alarm	The predicted runtime is lower than the user-specified minimum runtime alarm threshold. At least one battery module has failed or the load has increased.	**Option 1:** Install additional battery modules. See “Replace a battery” on page 20. **Option 2:** Replace failed battery modules. **Option 3:** Reduce the load. **Option 4:** Change the alarm limit.

Display Message	Meaning	Corrective Action
Site Wiring Fault	There is a problem with the phase rotation or a phase is missing in the input voltage to the UPS.	Contact the certified electrician that installed the system.
Static Bypass Switch Module Fault	The static bypass switch module has failed and requires replacement.	Contact APC Customer Support.
Static Bypass Switch Module Removed	The system no longer detects a static bypass switch module.	**Option 1**: Ensure the static bypass switch module is installed properly. **Option 2**: Call APC Customer Support for replacement of the static bypass switch module.
System Power Supply Card Fault	The system power supply card has failed and requires replacement.	Ensure that the power supply card is installed properly. See “Replace a power management card” on page 18
System Start-Up Configuration Fault	The system configuration download has failed. Unable to determine the system voltage or frame size.	Check for other alarms and contact APC Customer Support.

Modular Distribution Fault List

The display interface will identify the number of the power distribution module that has caused an alarm or warning.

Display Message	Meaning	Corrective Action
High Module Current	The threshold of the high module current has been exceeded.	Evaluate the threshold setting. If necessary, adjust it for your situation.
High Subfeed Current	The threshold of the high subfeed current has been exceeded.	Evaluate the threshold setting. If necessary, adjust it for your situation.
Low Module Current	The threshold of the low module current has been exceeded.	Evaluate the threshold setting. If necessary, adjust it for your situation.
Low Subfeed Current	The threshold of the low subfeed current has been exceeded.	Evaluate the threshold setting. If necessary, adjust it for your situation.
Maximum Module Current	The threshold of the maximum module current has been exceeded.	Evaluate the threshold setting. If necessary, adjust it for your situation.
Maximum Subfeed Current	The threshold of the maximum subfeed current has been exceeded.	Evaluate the threshold setting. If necessary, adjust it for your situation.
Minimum Module Current	The threshold of the minimum module current has been exceeded.	Evaluate the threshold setting. If necessary, adjust it for your situation.
Minimum Subfeed Current	The threshold of the minimum subfeed current has been exceeded.	Evaluate the threshold setting. If necessary, adjust it for your situation.
Modular Distribution Communication	Communication has been lost with the power distribution module.	Check the communication cables to ensure they are properly connected. Contact APC Customer Support.
Module Breaker Open	A modular circuit breaker is open.	Check the modular circuit breakers to see if one has been over-loaded. Replace if necessary.
Subfeed Breaker Open	A subfeed circuit breaker is open.	Check the subfeed circuit breakers to see if one has been over-loaded.

PDU Fault List

Display Message	Meaning	Corrective Action
Maintenance Bypass Alarm	The system is in maintenance bypass: the Q2 switch is open and the Q3 switch is closed.	No corrective action necessary.
Output V <Ln-N> Voltage Under Limit	Phase-to-neutral output voltage for phase <L-N> has dropped below the configured limit.	Evaluate the threshold setting. If necessary, adjust it for your situation.
Output V <Ln-N> Voltage Over Limit	Phase-to-neutral output voltage for phase <L-N> exceeded the configured limit.	Evaluate the threshold setting. If necessary, adjust it for your situation.
Output I L<n> Current Over Limit	Current of output phase <n> exceeded the configured limit.	Evaluate the threshold setting. If necessary, adjust it for your situation.
Output I L<n> Current Under Limit	Current of output phase <n> dropped below the configured limit.	Evaluate the threshold setting. If necessary, adjust it for your situation.
Output FDev Freq Out of Range	Frequency of the output current is above or below the range that is configured as acceptable.	Evaluate the threshold setting. If necessary, adjust it for your situation.
<User Contact Name> Alarm Active	A user-configured contact connected to the system is reporting an alarm condition.	Determine why the alarm has occurred. This is a user-specific alarm setting.
No UPS Input Breaker Q1 Open	The Q1 switch is open, and the UPS is disconnected from the input voltage.	Close the Q1 switch to reconnect the UPS to utility/mains power.
No Panel Feed Breakers Q2 & Q3 Open	The Q2 & Q3 switches are open, and the system is not supporting the connected equipment.	For safety reasons, ensure that the switches were not closed for maintenance purposes. If the switches are open, close Q2 for UPS operation, and Q3 for maintenance bypass.
A typical Bypass Mode Alarm	The alarm will be active in the event Q3 is on at the same time as Q1 and Q5.	**Option 1:** Resume normal UPS operation. **Option 2:** Go to maintenance bypass. **Option 3**: Contact APC Customer Support.
Transformer Overheating Alarm	The temperature of the transformer has exceeded 18°C.	**Option 1**: Check for obstructions to air flow. **Option 2**: Reduce load. **Option 3**: Check ambient air temperature. **Option 4**: Contact APC Customer Support.
Cooling Fan Failure Alarm	One fan is not working or not spinning fast enough, or one pole of the 3-pole circuit breaker has tripped.	**Option 1**: Make sure all four fans are running. **Option 2**: Check breaker positions. **Option 3**: Contact APC Customer Support.

APC Worldwide Customer Support

Customer support for this or any other APC product is available at no charge in any of the following ways:

- Visit the APC Web site to access documents in the APC Knowledge Base and to submit customer support requests.
  - **www.apc.com** (Corporate Headquarters)
    Connect to localized APC Web sites for specific countries, each of which provides customer support information.
  - **www.apc.com/support/**
    Global support searching APC Knowledge Base and using e-support.
- Contact the APC Customer Support Center by telephone or e-mail.
  - Local, country-specific centers: go to **www.apc.com/support/contact** for contact information.

For information on how to obtain local customer support, contact the APC representative or other distributors from whom you purchased your APC product.

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